(FILE 'HOME' ENTERED AT 07:11:20 ON 15 FEB 2005)

FILE 'REGISTRY' ENTERED AT 07:11:29 ON 15 FEB 2005
L1 1 S DONEPEZIL/CN

FILE 'CAPLUS' ENTERED AT 07:11:53 ON 15 FEB 2005
L2 18 S L1/P

FILE 'REGISTRY' ENTERED AT 07:13:43 ON 15 FEB 2005
L3 1 S DONEPEZIL HYDROCHLORIDE/CN

FILE 'CAPLUS' ENTERED AT 07:14:11 ON 15 FEB 2005
L4 26 S L3/P
L5 4 S (L2 OR L4) AND ?CYCLIZ?

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265402 HYDROGENA?
L6 13 (L2 OR L4) AND HYDROGENA?

=> d bib hit 1-13

L6 ANSWER 1 OF 13 CAPLUS COPYRIGHT 2005 ACS on STN
AN 2005:29309 CAPLUS
DN 142:113913
TI Catalytic **hydrogenation** process for the preparation of intermediates for acetyl cholinesterase inhibitors
IN Reddy, Bandi Parthasaradhi; Reddy, Kura Rathnakar; Reddy, Rapolu Raji; Reddy, Dasari Muralidhara
PA Hetero Drugs Limited, India
SO PCT Int. Appl., 16 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2005003092	A1	20050113	WO 2003-IN232	20030701

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRAI WO 2003-IN232 20030701
RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT
TI Catalytic **hydrogenation** process for the preparation of intermediates for acetyl cholinesterase inhibitors
AB A simple industrial process for the preparation of the intermediates of acetyl cholinesterase inhibitors [I; R = H, lower alkoxy; Y = H, F; n = 1-4; e.g., 4-[(5,6-dimethoxy-1-indanon)-2-yl]methylpiperidine hydrochloride] is described which comprises the **hydrogenation** of the corresponding 4-pyridyl analog prepared by **hydrogenated** using a platinum oxide, Pt/C, raney nickel, or ruthenium oxide catalyst in the presence of an acid (e.g., aqueous HCl) under a pressure of 1-10 bars to give the 4-piperidinyl intermediate [II; e.g., 5,6-dimethoxy-2-(4-pyridyl)methyl-1-indanone].
ST dimethoxypyridylmethylindanone prepn catalytic **hydrogenation** dimethoxyindanonylmethylpiperidine

IT Amines, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(aromatic; catalytic **hydrogenation** process for the preparation of intermediates for acetyl cholinesterase inhibitors)
IT **Hydrogenation**
(catalytic **hydrogenation** process for the preparation of intermediates for acetyl cholinesterase inhibitors)
IT Acids, reactions
RL: RGT (Reagent); RACT (Reactant or reagent)
(catalytic **hydrogenation** process for the preparation of intermediates for acetyl cholinesterase inhibitors)
IT Amines, preparation
RL: SPN (Synthetic preparation); PREP (Preparation)
(cyclic; catalytic **hydrogenation** process for the preparation of intermediates for acetyl cholinesterase inhibitors)
IT Amines, preparation
RL: SPN (Synthetic preparation); PREP (Preparation)
(salts; catalytic **hydrogenation** process for the preparation of intermediates for acetyl cholinesterase inhibitors)
IT 7440-44-0, Activated carbon, uses
RL: CAT (Catalyst use); USES (Uses)
(activated, support; catalytic **hydrogenation** process for the preparation of intermediates for acetyl cholinesterase inhibitors)
IT 7440-02-0, Raney nickel, uses
RL: CAT (Catalyst use); USES (Uses)
(catalysts; catalytic **hydrogenation** process for the preparation of intermediates for acetyl cholinesterase inhibitors)
IT 7440-05-3, Palladium, uses 11113-84-1, Ruthenium oxide 11129-89-8, Platinum oxide
RL: CAT (Catalyst use); USES (Uses)
(catalytic **hydrogenation** process for the preparation of intermediates for acetyl cholinesterase inhibitors)
IT 64-19-7, Acetic acid, reactions 1333-74-0, Hydrogen, reactions 4803-57-0 7647-01-0, Hydrogen chloride, reactions 7664-38-2, Phosphoric acid, reactions 7664-93-9, Sulfuric acid, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(catalytic **hydrogenation** process for the preparation of intermediates for acetyl cholinesterase inhibitors)
IT 120013-39-0P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(catalytic **hydrogenation** process for the preparation of intermediates for acetyl cholinesterase inhibitors)
IT 120014-30-4P
RL: SPN (Synthetic preparation); PREP (Preparation)
(catalytic **hydrogenation** process for the preparation of intermediates for acetyl cholinesterase inhibitors)
IT **120011-70-3P**, Donepezil hydrochloride
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

L6 ANSWER 2 OF 13 CAPLUS COPYRIGHT 2005 ACS on STN
AN 2004:802718 CAPLUS
DN 141:314158
TI Process for the preparation of donepezil and derivatives thereof
IN Kumar, Yatendra; Prasad, Mohan; Nath, Asok; Maheshwari, Nitin
PA Ranbaxy Laboratories Limited, India
SO PCT Int. Appl., 25 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2004082685	A1	20040930	WO 2004-IB843	20040322

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRAI IN 2003-DE352 A 20030321

OS CASREACT 141:314158; MARPAT 141:314158

RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

AB A process for the preparation of donepezil and its derivs. of formula I (R1-R4 = independently H, straight or branched -chain alkyl, alkoxy, alkoxycarbonyl, etc.; or a salt thereof), which comprises reducing 2-(4-pyridyl)methyl-1-indanone of formula II, is disclosed. For example, reaction of 5,6-dimethoxyindan-1-one with pyridine-4-carboxaldehyde, followed by **hydrogenation** and substitution with benzyl bromide, gave donepezil•HCl, which is 1-benzyl-4-[(5,6-dimethoxy-1-indanone)-2-yl]methylpiperidine. Thus, the present invention provides a process for the preparation of donepezil or a pharmaceutically acceptable salt thereof, and pharmaceutical compns. that include the donepezil or a pharmaceutically acceptable salt thereof, which are active compds. for the treatment of CNS disorders.

IT 81270-45-3P, 2-(4-Piperidinyl)methyl-1-indanone **120011-70-3P**
RL: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP (Preparation)
(preparation of donepezil and derivs.)

L6 ANSWER 3 OF 13 CAPLUS COPYRIGHT 2005 ACS on STN

AN 2004:652671 CAPLUS

DN 141:174080

TI **Hydrogenation** and benzylation process for the preparation of 1-benzyl-4-[[5,6-dimethoxy-1-indanon)-2-yl]methyl]piperidine hydrochloride (donepezil hydrochloride)

IN Radhakrishnan, Tarur Venkatasubramanian; Govind, Sathe Dhanajay; Venkatraman, Naidu Avinash

PA India

SO U.S. Pat. Appl. Publ., 5 pp., Cont.-in-part of U.S. Ser. No. 365,717.
CODEN: USXXCO

DT Patent

LA English

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2004158070	A1	20040812	US 2003-714724	20031117
	US 6649765	B1	20031118	US 2003-365717	20030212
PRAI	US 2003-365717	A2	20030212		

OS CASREACT 141:174080

TI **Hydrogenation** and benzylation process for the preparation of 1-benzyl-4-[[5,6-dimethoxy-1-indanon)-2-yl]methyl]piperidine hydrochloride (donepezil hydrochloride)

AB A process for the preparation of 1-benzyl-4-[[(5,6-dimethoxy-1-indanon)-2-yl]methyl]piperidine hydrochloride (i.e., donepezil HCl; m.p. 210-212°) is described in which 5,6-dimethoxy-2-[(pyridin-4-yl)methyl]inda-1-one is **hydrogenated** with a noble metal catalyst

(e.g., Pd/C) or a non-oxide derivative of a noble metal catalyst in a solvent at 20-100°/10-90 psi-gauge to give 4-[[(5,6-dimethoxy-1-indanon)-2-yl]methyl]piperidine which is benzylated with benzyl bromide at 20-80° followed by salification with methanolic HCl.

ST donepezil hydrochloride prepn **hydrogenation** benzylation; benzyldimethoxyindanonylmethylpiperidine hydrochloride prepn **hydrogenation** benzylation

IT Alcohols, uses
RL: NUU (Other use, unclassified); USES (Uses)
(aliphatic, C1-4, solvents; **hydrogenation** and benzylation process for the preparation of 1-benzyl-4-[[5,6-dimethoxy-1-indanon)-2-yl]methyl]piperidine hydrochloride (donepezil hydrochloride))

IT Ketones, uses
RL: NUU (Other use, unclassified); USES (Uses)
(aromatic, solvents; **hydrogenation** and benzylation process for the preparation of 1-benzyl-4-[[5,6-dimethoxy-1-indanon)-2-yl]methyl]piperidine hydrochloride (donepezil hydrochloride))

IT **Hydrogenation** catalysts
(chemoselective; Pt-Group metals in a **hydrogenation** and benzylation process for the preparation of 1-benzyl-4-[[5,6-dimethoxy-1-indanon)-2-yl]methyl]piperidine hydrochloride (donepezil hydrochloride))

IT **Hydrogenation**
(chemoselective; **hydrogenation** and benzylation process for the preparation of 1-benzyl-4-[[5,6-dimethoxy-1-indanon)-2-yl]methyl]piperidine hydrochloride (donepezil hydrochloride))

IT Benzylation
Quaternization
(**hydrogenation** and benzylation process for the preparation of 1-benzyl-4-[[5,6-dimethoxy-1-indanon)-2-yl]methyl]piperidine hydrochloride (donepezil hydrochloride))

IT Platinum-group metals
RL: CAT (Catalyst use); USES (Uses)
(**hydrogenation** catalysts in a **hydrogenation** and benzylation process for the preparation of 1-benzyl-4-[[5,6-dimethoxy-1-indanon)-2-yl]methyl]piperidine hydrochloride (donepezil hydrochloride))

IT Chemoselectivity
(in a **hydrogenation** and benzylation process for the preparation of 1-benzyl-4-[[5,6-dimethoxy-1-indanon)-2-yl]methyl]piperidine hydrochloride (donepezil hydrochloride))

IT Acids, uses
RL: NUU (Other use, unclassified); USES (Uses)
(organic, solvents; **hydrogenation** and benzylation process for the preparation of 1-benzyl-4-[[5,6-dimethoxy-1-indanon)-2-yl]methyl]piperidine hydrochloride (donepezil hydrochloride))

IT 7440-44-0, Activated carbon, uses
RL: CAT (Catalyst use); USES (Uses)
(activated, support; **hydrogenation** catalyst in a **hydrogenation** and benzylation process for the preparation of 1-benzyl-4-[[5,6-dimethoxy-1-indanon)-2-yl]methyl]piperidine hydrochloride (donepezil hydrochloride))

IT 121-44-8, Triethylamine, reactions
RL: RGT (Reagent); RACT (Reactant or reagent)
(base; in a **hydrogenation** and benzylation process for the preparation of 1-benzyl-4-[[5,6-dimethoxy-1-indanon)-2-yl]methyl]piperidine hydrochloride (donepezil hydrochloride))

IT 100-39-0, Benzyl bromide 4803-57-0
RL: RCT (Reactant); RACT (Reactant or reagent)
(**hydrogenation** and benzylation process for the preparation of 1-benzyl-4-[[5,6-dimethoxy-1-indanon)-2-yl]methyl]piperidine hydrochloride (donepezil hydrochloride))

IT **120011-70-3P**, Donepezil hydrochloride
RL: SPN (Synthetic preparation); PREP (Preparation)
(**hydrogenation** and benzylation process for the preparation of 1-benzyl-4-[[5,6-dimethoxy-1-indanon)-2-yl]methyl]piperidine hydrochloride (donepezil hydrochloride))

IT 7647-10-1, Palladium chloride 10049-07-7, Rhodium chloride 10049-08-8, Ruthenium chloride 10489-46-0, Rhodium sulfate 13566-03-5, Palladium sulfate 41860-99-5, Ruthenium sulfate
RL: CAT (Catalyst use); USES (Uses)
(**hydrogenation** catalyst in a **hydrogenation** and benzylation process for the preparation of 1-benzyl-4-[[5,6-dimethoxy-1-indanon)-2-yl]methyl]piperidine hydrochloride (donepezil hydrochloride))

IT 7440-05-3, Palladium, uses 7440-16-6, Rhodium, uses 7440-18-8, Ruthenium, uses
RL: CAT (Catalyst use); USES (Uses)
(in a **hydrogenation** and benzylation process for the preparation of 1-benzyl-4-[[5,6-dimethoxy-1-indanon)-2-yl]methyl]piperidine hydrochloride (donepezil hydrochloride))

IT 1333-74-0, Hydrogen, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(in a **hydrogenation** and benzylation process for the preparation of 1-benzyl-4-[[5,6-dimethoxy-1-indanon)-2-yl]methyl]piperidine hydrochloride (donepezil hydrochloride))

IT 120014-30-4P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(in a **hydrogenation** and benzylation process for the preparation of 1-benzyl-4-[[5,6-dimethoxy-1-indanon)-2-yl]methyl]piperidine hydrochloride (donepezil hydrochloride))

IT 64-19-7, Acetic acid, uses 75-09-2, Dichloromethane, uses 141-78-6, Ethyl acetate, uses
RL: NUU (Other use, unclassified); USES (Uses)
(solvent; in a **hydrogenation** and benzylation process for the preparation of 1-benzyl-4-[[5,6-dimethoxy-1-indanon)-2-yl]methyl]piperidine hydrochloride (donepezil hydrochloride))

IT 7647-01-0, Hydrogen chloride, reactions 7732-18-5, Water, reactions
RL: NUU (Other use, unclassified); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)
(solvent; in a **hydrogenation** and benzylation process for the preparation of 1-benzyl-4-[[5,6-dimethoxy-1-indanon)-2-yl]methyl]piperidine hydrochloride (donepezil hydrochloride))

IT 471-34-1, Calcium carbonate, uses 1344-28-1, Alumina, uses 7727-43-7, Barium sulfate
RL: CAT (Catalyst use); USES (Uses)
(support; **hydrogenation** catalyst in a **hydrogenation** and benzylation process for the preparation of 1-benzyl-4-[[5,6-dimethoxy-1-indanon)-2-yl]methyl]piperidine hydrochloride (donepezil hydrochloride))

L6 ANSWER 4 OF 13 CAPLUS COPYRIGHT 2005 ACS on STN
AN 2004:589284 CAPLUS
DN 141:123572
TI Process for preparation of donepezil
IN Reddy, Manne Satyanarayana; Eswaraiah, Sajja; Thippannachar, Mathad Vijayavitthal; Chandrashekar, Elati Ravi Rama; Kumar, Podichetty Anil; Kumar, Kolla Naveen
PA Reddy's Laboratories Limited, India; Reddy's Laboratories, Inc.
SO U.S. Pat. Appl. Publ., 7 pp.
CODEN: USXXCO
DT Patent
LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2004143121	A1	20040722	US 2003-626499	20030724
PRAI	IN 2002-MA555	A	20020724		

OS CASREACT 141:123572

AB An efficient process for preparation of donepezil I is provided. In one embodiment, the process for preparation of donepezil includes suspending a catalyst, which is palladium metal on carbon and the compound II in an alc. solvent and **hydrogenating** the suspension at the hydrogen pressure of from about 1 to about 5 and a temperature of from about 40 to about 90°C till the **hydrogenation** reaction is substantially complete to obtain a compound III which then is converted to donepezil by alkylation with benzyl bromide. The processes of the invention are believed to be simple, eco-friendly, and com. viable.

IT **Hydrogenation**
(process for preparation of donepezil by **hydrogenation** of 5,6-dimethoxy-2-[(pyridin-4-yl)methylene]indan-1-one and subsequent alkylation with benzyl bromide)

IT 7440-05-3, Palladium, uses
RL: CAT (Catalyst use); USES (Uses)
(process for preparation of donepezil by **hydrogenation** of 5,6-dimethoxy-2-[(pyridin-4-yl)methylene]indan-1-one and subsequent alkylation with benzyl bromide)

IT 4803-74-1P 120014-30-4P
RL: IMF (Industrial manufacture); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(process for preparation of donepezil by **hydrogenation** of 5,6-dimethoxy-2-[(pyridin-4-yl)methylene]indan-1-one and subsequent alkylation with benzyl bromide)

IT **120014-06-4P**, Donepezil
RL: IMF (Industrial manufacture); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(process for preparation of donepezil by **hydrogenation** of 5,6-dimethoxy-2-[(pyridin-4-yl)methylene]indan-1-one and subsequent alkylation with benzyl bromide)

IT 100-39-0, Benzyl bromide 872-85-5, Pyridine-4-carboxaldehyde 2107-69-9, 5,6-Dimethoxyindan-1-one
RL: RCT (Reactant); RACT (Reactant or reagent)
(process for preparation of donepezil by **hydrogenation** of 5,6-dimethoxy-2-[(pyridin-4-yl)methylene]indan-1-one and subsequent alkylation with benzyl bromide)

IT 64-19-7, Acetic acid, reactions
RL: RGT (Reagent); RACT (Reactant or reagent)
(process for preparation of donepezil by **hydrogenation** of 5,6-dimethoxy-2-[(pyridin-4-yl)methylene]indan-1-one and subsequent alkylation with benzyl bromide)

IT 67-56-1, Methanol, uses
RL: NUU (Other use, unclassified); USES (Uses)
(solvent; process for preparation of donepezil by **hydrogenation** of 5,6-dimethoxy-2-[(pyridin-4-yl)methylene]indan-1-one and subsequent alkylation with benzyl bromide)

L6 ANSWER 5 OF 13 CAPLUS COPYRIGHT 2005 ACS on STN
AN 2004:527381 CAPLUS
DN 142:74419
TI New approach to N-substituted-1,2,3,6-tetrahydro-pyridine-4-carbaldehyde, a precursor for synthesizing Aricept, isoguvacine, and deethylibophyllidine
AU Tsai, Min-Ruei; Sun, Pei-Pei; Chang, Meng-Yang; Changa, Nein-Chen
CS Department of Chemistry, National Sun Yat-Sen University, Kaohsiung, 804,

Taiwan
SO Journal of the Chinese Chemical Society (Taipei, Taiwan) (2004), 51(3), 613-617
CODEN: JCCTAC; ISSN: 0009-4536
PB Chinese Chemical Society
DT Journal
LA English
RE.CNT 33 THERE ARE 33 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT
IT 503544-95-4P, 1-Benzyl-1,2,3,6-tetrahydro-4-pyridinecarboxaldehyde
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(**hydrogenation**, precursor to isoguvacine; new approach to N-substituted piperidine-4-carbaldehydes as precursors for synthesizing Aricept, isoguvacine, and deethylibophyllidine)
IT 64603-90-3P, Isoguvacine 74170-69-7P, Deethylibophyllidine
120011-70-3P, Aricept
RL: PNU (Preparation, unclassified); PREP (Preparation)
(new approach to N-substituted piperidine-4-carbaldehydes as precursors for synthesizing Aricept, isoguvacine, and deethylibophyllidine)

L6 ANSWER 6 OF 13 CAPLUS COPYRIGHT 2005 ACS on STN
AN 2003:903267 CAPLUS
DN 139:381380
TI Process for the preparation of 1-benzyl-4-[(5,6-dimethoxy-1-indanon)-2-yl)methylpiperidine hydrochloride (donepezil hydrochloride)
IN Vidyadhar, Joshi Shreerang; Venkatraman, Naidu Avinash; Pandurang, Sutar Rajiv
PA USV Limited, BSD Marg., India
SO U.S., 3 pp.
CODEN: USXXAM
DT Patent
LA English
FAN.CNT 2

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI US 6649765	B1	20031118	US 2003-365717	20030212
US 2004158070	A1	20040812	US 2003-714724	20031117
PRAI US 2003-365717	A2	20030212		

OS CASREACT 139:381380
RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT
AB A process for the preparation of 1-benzyl-4-[(5,6-dimethoxy-1-indanon)-2-yl]methylpiperidine hydrochloride (donepezil HCl) is described in which 5,6-dimethoxy-2-(pyridin-4-yl)methyleneinda-1-one is **hydrogenated** with a Platinum-Group metal oxide catalyst in an organic solvent at 20-50°/10-45 psi-gauge, and the resulting 4-[(5,6-dimethoxy-1-indanon)-2-yl]methylpiperidine is benzylated with an benzyl bromide in an organic solvent at 30-80° and salified with methanolic HCl.
IT **Hydrogenation** catalysts
(Pt-Group metal oxides in a process for the preparation of 1-benzyl-4-[(5,6-dimethoxy-1-indanon)-2-yl)methylpiperidine hydrochloride (donepezil hydrochloride))
IT **Hydrogenation**
(in a process for the preparation of 1-benzyl-4-[(5,6-dimethoxy-1-indanon)-2-yl)methylpiperidine hydrochloride (donepezil hydrochloride))
IT Platinum-group metal compounds
RL: CAT (Catalyst use); USES (Uses)
(oxides; **hydrogenation** catalysts in a process for the preparation of 1-benzyl-4-[(5,6-dimethoxy-1-indanon)-2-yl)methylpiperidine hydrochloride (donepezil hydrochloride))

IT Group VIII element oxides
RL: CAT (Catalyst use); USES (Uses)
(platinum-group; **hydrogenation** catalysts in a process for the preparation of 1-benzyl-4-[(5,6-dimethoxy-1-indanon)-2-yl)methylpiperidine hydrochloride (donepezil hydrochloride))

IT 1314-15-4, Platinum dioxide
RL: CAT (Catalyst use); USES (Uses)
(**hydrogenation** catalyst in a process for the preparation of 1-benzyl-4-[(5,6-dimethoxy-1-indanon)-2-yl)methylpiperidine hydrochloride (donepezil hydrochloride))

IT **120011-70-3P**, Donepezil hydrochloride
RL: SPN (Synthetic preparation); PREP (Preparation)
(process for the preparation of 1-benzyl-4-[(5,6-dimethoxy-1-indanon)-2-yl)methylpiperidine hydrochloride (donepezil hydrochloride))

L6 ANSWER 7 OF 13 CAPLUS COPYRIGHT 2005 ACS on STN
AN 1999:464279 CAPLUS
DN 131:102201
TI Process for production of donepezil derivative
IN Iimura, Yoichi
PA Eisai Co., Ltd., Japan
SO PCT Int. Appl., 36 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9936405	A1	19990722	WO 1999-JP111	19990114
	W: CA, US				
	RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	CA 2316360	AA	19990722	CA 1999-2316360	19990114
	EP 1047674	A1	20001102	EP 1999-900320	19990114
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
	JP 11263774	A2	19990928	JP 1999-8759	19990118
	US 6252081	B1	20010626	US 2000-582496	20000627
PRAI	JP 1998-6908	A	19980116		
	WO 1999-JP111	W	19990114		

OS CASREACT 131:102201; MARPAT 131:102201
RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

AB The present invention provides a novel industrially or economically preferable process for production of a hydrogen halogenide salt of a donepezil derivative (I; R1 = H, alkoxy; n = 1-4; X = a halogen atom) having an excellent pharmacol. action as medicament, namely, reaction of 1-indanone derivative (II; R = H; R1, n = same as above) with carbonate ester to obtain 2-alkoxycarbonyl-1-indanone derivative (II; R = CO2R2; wherein lower alkyl; R1, n = same as above), followed by reaction with halogenated (4-pyridyl)methyl or a salt thereof and decarboxylation successively to obtain 2-(4-pyridyl)methyl-1-indanone derivative (III; R1, n = same as above), then reaction with halogenated benzyl to obtain quaternary ammonium salt (IV; R1, n = same as above; X = a halogen atom), then reduction to the donepezil derivative (I), and synthetic intermediate thereof. The donepezil derivative is useful as prophylactic or medicament for senile dementia, especially for Alzheimer disease (no data). Thus, 2.00 g 5,6-dimethoxy-2-ethoxycarbonyl-1-indanone was dissolved in DMF and treated with 0.73 g 60% NaH in oil under ice-cooling, and stirred at room temperature for 30 min. The reaction mixture was cooled in an ice-water bath, treated with 1.49 g 4-pyridylmethyl chloride, and stirred under the same condition and then at

room temperature overnight to give 5,6-dimethoxy-2-ethoxycarbonyl-2-(4-pyridylmethyl)-1-indanone as a brown oil, which was refluxed with aqueous ethanol containing KOH for 30 min for decarboxylation to give 5,6-dimethoxy-2-(4-pyridylmethyl)-1-indanone (85% yield through two steps). The latter compound (1.00 g) was dissolved in MeCN under reflux, followed by adding 0.50 mL benzyl bromide, and the refluxing was continued for 2.5 h to quant. give 1-benzyl-4-[(5,6-dimethoxy-1-oxoindan-2-yl)methyl]pyridinium bromide. This compound (1.00 g) was dissolved in MeOH and **hydrogenated** in the presence of 0.1 g platinum oxide fro 3 h at room temperature to give 99% donepezil free base.

ST donepezil prepn senile dementia Alzheimer disease; benzyloxoindanylmethylpyridinium halide **hydrogenation** donepezil

IT **Hydrogenation** catalysts
(platinum oxide; preparation of donepezil derivative from indanone derivative via
catalytic **hydrogenation** of N-benzyl(oxoindanylmethyl)pyridinium halide)

IT **Hydrogenation**
(preparation of donepezil derivative from indanone derivative via catalytic **hydrogenation** of N-benzyl(oxoindanylmethyl)pyridinium halide)

IT 7440-05-3D, Palladium, supported on carbon, uses 11113-84-1, Ruthenium oxide 11129-89-8, Platinum oxide
RL: CAT (Catalyst use); USES (Uses)
(preparation of donepezil derivative from indanone derivative via catalytic **hydrogenation** of N-benzyl(oxoindanylmethyl)pyridinium halide)

IT 4803-57-0P 231283-81-1P 231283-82-2P
RL: IMF (Industrial manufacture); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation of donepezil derivative from indanone derivative via catalytic **hydrogenation** of N-benzyl(oxoindanylmethyl)pyridinium halide)

IT **120011-70-3P**, Donepezil hydrochloride **120014-06-4P**, Donepezil
RL: IMF (Industrial manufacture); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of donepezil derivative from indanone derivative via catalytic **hydrogenation** of N-benzyl(oxoindanylmethyl)pyridinium halide)

IT 100-39-0, Benzyl bromide 105-58-8, Diethyl carbonate 616-38-6, Dimethyl carbonate 623-53-0, Methyl ethyl carbonate 623-96-1, Dipropyl carbonate 10445-91-7, 4-Pyridylmethyl chloride 53295-44-6, 5,6-Dimethoxy-2-ethoxycarbonyl-1-indanone 54751-01-8 138761-37-2
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of donepezil derivative from indanone derivative via catalytic **hydrogenation** of N-benzyl(oxoindanylmethyl)pyridinium halide)

L6 ANSWER 8 OF 13 CAPLUS COPYRIGHT 2005 ACS on STN
AN 1996:425279 CAPLUS
DN 125:86503
TI Process and catalysts for the **hydrogenation** production of 1-benzyl-4-(indan-1-onyl)piperidines from pyridinium salts
IN Lensky, Stephen
PA Bayer A.-G., Germany
SO Eur. Pat. Appl., 8 pp.
CODEN: EPXXDW
DT Patent
LA German
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 711756	A1	19960515	EP 1995-116888	19951026
	EP 711756	B1	19980722		

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, SE

	DE 4439822	A1	19960829	DE 1994-4439822	19941108
	AT 168676	E	19980815	AT 1995-116888	19951026
	ES 2121276	T3	19981116	ES 1995-116888	19951026
	JP 08225527	A2	19960903	JP 1995-306422	19951101
	US 5606064	A	19970225	US 1995-552330	19951102
	CA 2162081	AA	19960509	CA 1995-2162081	19951103
PRAI	DE 1994-4439822	A	19941108		

OS MARPAT 125:86503

TI Process and catalysts for the **hydrogenation** production of 1-benzyl-4-(indan-1-onyl)piperidines from pyridinium salts

AB The title compds. [I; R1-R4 = H, (un)branched alkyl, alkoxy, alkoxycarbonyl, halohen, alkyl- or dialkylamino], useful as CNS agents (no data), are prepared by the **hydrogenation** of pyridinium salts (II; X = halide, tosylate, sulfate). Thus, II (R1-R4 = H, X = Br) was **hydrogenated** with a PtO2 catalyst in MeOH, producing I in 81% yield.

ST benzylpiperidinylindanone prepn CNS agent; pyridinium salt **hydrogenation** prepn benzylpiperidinylindanone

IT **Hydrogenation**
(of pyridinium salts in production of 1-benzyl-4-(indan-1-onyl)piperidines)

IT 7440-06-4, Platinum, uses
RL: CAT (Catalyst use); USES (Uses)
(process and catalysts for the **hydrogenation** production of 1-benzyl-4-(indan-1-onyl)piperidines from pyridinium salts)

IT 83-33-0, Indanone 100-39-0, Benzyl bromide 872-85-5, Pyridine-4-carboxaldehyde 2107-69-9, 5,6-Dimethoxyindan-1-one
RL: RCT (Reactant); RACT (Reactant or reagent)
(process and catalysts for the **hydrogenation** production of 1-benzyl-4-(indan-1-onyl)piperidines from pyridinium salts)

IT 4803-74-1P 4875-89-2P 178551-25-2P 178551-26-3P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(process and catalysts for the **hydrogenation** production of 1-benzyl-4-(indan-1-onyl)piperidines from pyridinium salts)

IT **120014-06-4P** 149874-72-6P
RL: SPN (Synthetic preparation); PREP (Preparation)
(process and catalysts for the **hydrogenation** production of 1-benzyl-4-(indan-1-onyl)piperidines from pyridinium salts)

L6 ANSWER 9 OF 13 CAPLUS COPYRIGHT 2005 ACS on STN

AN 1993:560046 CAPLUS

DN 119:160046

TI Synthesis and anti-acetylcholinesterase activity of 1-benzyl-4-[(5,6-dimethoxy-1-indanon-2-yl)methyl]piperidine hydrochloride (E2020) and related compounds

AU Sugimoto, Hachiro; Iimura, Youichi; Yamanishi, Yoshiharu; Yamatsu, Kiyomi

CS Tsukuba Res. Lab., Eisai Co., Ltd., Tsukuba, 300-26, Japan

SO Bioorganic & Medicinal Chemistry Letters (1992), 2(8), 871-6
CODEN: BMCLE8; ISSN: 0960-894X

DT Journal

LA English

IT 120014-07-5 149874-67-9 149874-68-0 149874-69-1 149874-70-4 149874-71-5 149874-86-2 149874-87-3 149874-88-4 149874-89-5 149874-90-8 149874-91-9 149874-92-0 149874-93-1
RL: RCT (Reactant); RACT (Reactant or reagent)
(**hydrogenation** of)

IT **120011-70-3P** 120012-04-6P 120013-38-9P 120013-45-8P **120014-06-4P** 120014-11-1P 120014-12-2P 120014-30-4P 149874-72-6P 149874-73-7P 149874-74-8P 149874-78-2P 149874-79-3P 149874-80-6P 149874-81-7P 149874-82-8P 149874-83-9P 149874-84-0P 149874-85-1P
RL: SPN (Synthetic preparation); PREP (Preparation)

(preparation and acetylcholinesterase inhibiting activity of)

L6 ANSWER 10 OF 13 CAPLUS COPYRIGHT 2005 ACS on STN
AN 1993:124398 CAPLUS
DN 118:124398
TI Preparation of (-)-1-benzyl-4-[(5,6-dimethoxy-1-indanon-2-yl)methyl]piperidine by asymmetric **hydrogenation** of (piperidylmethylene)indanone derivative
IN Iimura, Yoichi; Kajima, Takashi; Araki, Shin; Sugimoto, Hachiro; Kiyofuji, Nobuo; Kumobayashi, Hidenori
PA Eisai Co., Ltd., Japan; Takasago Perfumery Co., Ltd.
SO Jpn. Kokai Tokkyo Koho, 6 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 04187674	A2	19920706	JP 1990-320055	19901121
	JP 2965675	B2	19991018		
PRAI	JP 1990-320055		19901121		

OS CASREACT 118:124398
TI Preparation of (-)-1-benzyl-4-[(5,6-dimethoxy-1-indanon-2-yl)methyl]piperidine by asymmetric **hydrogenation** of (piperidylmethylene)indanone derivative
AB The title compound (I), a known acetylcholine esterase inhibitor useful for the treatment of Alzheimer-type senile dementia, is prepared by asym. **hydrogenation** of (piperidylmethylene)indanone derivative II in the presence of an optically active Ru-phosphine complex, preferably III [A = RuX4, B = NEt3; A = RuHX, B = null; A = null, B = RuAlZ; X = halo; Y = H, NH2, AcNH, SO3H; Rl = H, linear or branched lower alkyl; Al, Z = ClO4, PF6, BF4, R2CO2; R2 = alkyl, haloalkyl, (lower alkyl)phenyl, α-aminoalkyl, α-aminophenylalkyl]. Thus, a solution of 2.0 g II and 42.3 mg RuCl4.[(S)-(-)-2,2'-bis(diphenylphosphino)-1,1'-binaphthyl]2.NEt3 complex in 30 mL CH2Cl2 was stirred at H 77 kg/cm2 and 50° for 30 min and then at room temperature for 140 h, evaporated in vacuo, treated with 180 mL 0.1 N HCl (pH 2.0), extracted twice with EtOAc to remove the catalyst, adjusted to pH 9 with aqueous NaHCO3, and extracted with CH2Cl2 to give 85.4% (-)-I of 97.3% ee.
ST benzyldimethoxyindanonylmethylpiperidine prepn acetylcholine esterase inhibitor; piperidine indanoylmethyl acetylcholine esterase inhibitor; Alzheimer senile dementia treatment benzyldimethoxyindanoylmethylpiperidine; ruthenium phosphine asym **hydrogenation** catalyst; piperidylmethyleneindanone asym **hydrogenation**; BINAP ruthenium asym **hydrogenation** catalyst
IT **Hydrogenation**
(stereoselective, of [(benzylpiperidyl)methylene]dimethoxyindanone, (piperidylmethyl)indanone derivative from)
IT **Hydrogenation** catalysts
(stereoselective, ruthenium-phosphine complex, for (benzylpiperidyl)methylene]dimethoxyindanone to (piperidylmethyl)indanone derivative)
IT 1333-74-0, Hydrogen, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(asym. **hydrogenation** by, of (piperidylmethylene)indanone derivative)
IT 145546-80-1
RL: RCT (Reactant); RACT (Reactant or reagent)
(asym. **hydrogenation** of, (piperidylmethyl)indanone derivative from)
IT 103745-89-7 125778-32-7

RL: CAT (Catalyst use); USES (Uses)
(catalyst, for asym. **hydrogenation** of [(benzylpiperidyl)methylene]dimethoxyindanone)

IT 1333-74-0
RL: RCT (Reactant); RACT (Reactant or reagent)
(**hydrogenation**, stereoselective, of [(benzylpiperidyl)methylene]dimethoxyindanone, (piperidylmethyl)indanone derivative from)

IT **120014-06-4P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of, as acetylcholine esterase inhibitor)

L6 ANSWER 11 OF 13 CAPLUS COPYRIGHT 2005 ACS on STN
AN 1992:591509 CAPLUS
DN 117:191509
TI Preparation of optically active indanone derivative (salts) as acetylcholinesterase inhibitors and dementia-treating agents
IN Iimura, Yoichi; Kajima, Takashi; Araki, Shin; Sugimoto, Hachiro
PA Eisai Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 8 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 04021670	A2	19920124	JP 1990-124515	19900515
	JP 3075566	B2	20000814		
PRAI	JP 1990-124515		19900515		

AB d- And l-1-benzyl-4-(5,6-dimethoxy-1-indanon-2-yl)methylpiperidine (d- and l-I) and their pharmacol. acceptable salts are prepared **Hydrogenation** of 1-benzyl-4-(5,6-dimethoxy-1-indanon-2-ylidenyl)methylpiperidine (preparation given) over Pd/C in THF at room temperature for 6 h and treatment with HCl/AcOEt in CH2Cl2 gave 82% (±)-I.HCl. Salt decomposition and optical resolution of the product gave l-I, which showed IC50 of 4.8 nM against cerebral acetylcholinesterase, vs. 5.9 nM, for (±)-I.

IT **120011-70-3P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation and optical resolution of)

IT **120014-06-4P** 142057-78-1P 142057-80-5P 142097-05-0P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of, as acetylcholinesterase inhibitor)

L6 ANSWER 12 OF 13 CAPLUS COPYRIGHT 2005 ACS on STN
AN 1991:6302 CAPLUS
DN 114:6302
TI Preparation of piperidine derivatives as cholinergics
IN Sugimoto, Hachiro; Tsuchiya, Yutaka; Higure, Kunizo; Karibe, Norio; Iimura, Yoichi; Sasaki, Atsushi; Yamanishi, Yoshiharu; Ogura, Hiroo; Araki, Shin; Et, Al.
PA Eisai Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 54 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 02169569	A2	19900629	JP 1988-324620	19881222
	JP 2777159	B2	19980716		

PRAI JP 1988-324620 19881222

OS MARPAT 114:6302

AB The title compds. I [J = (substituted) Ph, pyridyl, quinolyl, indenyl, etc.; Z = (R2CH)n, CO(CHR2)n, etc.; n = 0-10; R2 = H, Me; T = N, C; Q = N, C, etc.; K = H, (substituted) Ph, cinnamyl, etc.; q = 1-3; dotted line indicates either single or double bond] were prepared **Hydrogenation** of piperidine derivative II in MeOH containing 5% Rh-C under hydrogen gave a piperidine derivative III. III in vitro exhibited an IC50 of 0.23 μM against acetylcholinesterase.

IT 22065-85-6P **120011-70-3P** 120011-73-6P 120011-79-2P
120014-06-4P 120014-18-8P 120014-21-3P 120014-24-6P
130927-86-5P 130927-87-6P 130927-88-7P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and reaction of, in preparation of acetylcholinesterase inhibitor)

IT 120011-67-8P 120011-68-9P 120011-69-0P **120011-70-3P**
120011-72-5P 120011-74-7P 120011-75-8P 120011-76-9P 120011-77-0P
120011-78-1P 120011-85-0P 120011-88-3P 120011-90-7P 120011-91-8P
120011-92-9P 120011-93-0P 120011-94-1P 120011-95-2P 120011-96-3P
120011-97-4P 120011-98-5P 120011-99-6P 120012-00-2P 120012-01-3P
120012-02-4P 120012-03-5P 120012-05-7P 120012-06-8P 120012-08-0P
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120012-16-0P 120012-17-1P 120012-18-2P 120012-20-6P 120012-21-7P
120012-22-8P 120012-23-9P 120012-24-0P 120012-25-1P 120012-26-2P
120012-28-4P 120012-30-8P 120012-31-9P 120012-32-0P 120012-33-1P
120012-34-2P 120012-35-3P 120012-36-4P 120012-38-6P 120012-40-0P
120012-41-1P 120012-42-2P 120012-44-4P 120012-45-5P 120012-46-6P
120012-47-7P 120012-48-8P 120012-49-9P 120012-50-2P 120012-51-3P
120012-52-4P 120012-53-5P 120012-54-6P 120012-55-7P 120012-56-8P
120012-57-9P 120012-58-0P 120012-59-1P 120012-60-4P 120012-61-5P
120012-62-6P 120012-63-7P 120012-64-8P 120012-65-9P 120012-66-0P
120012-67-1P 120012-68-2P 120012-69-3P 120012-70-6P 120012-71-7P
120012-72-8P 120012-73-9P 120012-74-0P 120012-75-1P 120012-76-2P
120012-77-3P 120012-78-4P 120012-79-5P 120012-80-8P 120012-81-9P
120012-82-0P 120012-83-1P 120012-84-2P 120012-85-3P 120012-86-4P
120012-87-5P 120012-88-6P 120012-89-7P 120012-90-0P 120012-91-1P
120012-92-2P 120012-93-3P 120012-94-4P 120012-95-5P 120012-96-6P
120012-98-8P 120012-99-9P 120013-00-5P 120013-01-6P 120013-02-7P
120013-03-8P 120013-04-9P 120013-05-0P 120013-06-1P 120013-07-2P
120013-08-3P 120013-09-4P 120013-10-7P 120013-11-8P 120013-12-9P
120013-13-0P 120013-14-1P 120013-15-2P 120013-16-3P 120013-17-4P
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120013-23-2P 120013-24-3P 120013-25-4P 120013-26-5P 120013-27-6P
120013-28-7P 120013-29-8P 120013-30-1P 120013-31-2P 120013-32-3P
120013-33-4P 120013-34-5P 120013-35-6P 120013-36-7P 120013-37-8P
120013-38-9P 120013-39-0P 120013-41-4P 120013-42-5P 120013-43-6P
120013-44-7P 120013-46-9P 120013-48-1P 120013-49-2P 120013-50-5P
120013-51-6P 120013-52-7P 120013-53-8P 120013-54-9P 120013-55-0P
120013-56-1P 120013-57-2P 120013-58-3P 120013-59-4P 120013-60-7P
120013-61-8P 120013-62-9P 120013-63-0P 120013-65-2P 120013-66-3P
120013-67-4P 120013-68-5P 120013-69-6P 120013-70-9P 120013-71-0P
120013-72-1P 120013-74-3P 120013-75-4P 120013-76-5P 120013-77-6P
120013-78-7P 120013-79-8P 120013-80-1P 120013-81-2P 120013-82-3P
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120013-93-6P 120013-94-7P 120013-96-9P 120013-97-0P 120013-98-1P
120013-99-2P 120014-00-8P 120014-01-9P 120014-02-0P 120014-03-1P
120014-04-2P 120014-05-3P 120028-72-0P 120028-73-1P 120028-74-2P
120028-75-3P 120028-76-4P 120028-77-5P 120028-79-7P 121202-92-4P
130927-61-6P 130927-62-7P 130927-63-8P 130927-64-9P 130927-65-0P
130927-66-1P 130927-67-2P 130927-68-3P 130927-69-4P 130927-70-7P

130927-71-8P 130927-72-9P 130927-73-0P 130927-74-1P 130927-75-2P
130927-76-3P 130927-78-5P 130927-80-9P 130927-81-0P 130943-87-2P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of, as cholinergic)

L6 ANSWER 13 OF 13 CAPLUS COPYRIGHT 2005 ACS on STN
AN 1989:173102 CAPLUS
DN 110:173102
TI Preparation of 1-benzyl-4-(substituted alkyl)piperidines and analogs as acetylcholinesterase inhibitors
IN Sugimoto, Hachiro; Tsuchiya, Yutaka; Higurashi, Kunizou; Karibe, Norio; Iimura, Yuoichi; Sasaki, Atsushi; Yamanashi, Yoshiharu; Ogura, Hiroo; Araki, Shin; et al.
PA Eisai Co., Ltd., Japan
SO Eur. Pat. Appl., 103 pp.
CODEN: EPXXDW
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 296560	A2	19881228	EP 1988-109924	19880622
	EP 296560	A3	19900502		
	EP 296560	B1	19960228		
	R: AT, BE, CH, DE, ES, FR, GB, GR, IT, LI, LU, NL, SE				
	FI 8802716	A	19881223	FI 1988-2716	19880608
	FI 95572	B	19951115		
	FI 95572	C	19960226		
	NO 8802696	A	19881223	NO 1988-2696	19880617
	NO 177590	B	19950710		
	NO 177590	C	19951018		
	ZA 8804338	A	19890329	ZA 1988-4338	19880617
	US 4895841	A	19900123	US 1988-209339	19880620
	DK 8803379	A	19881223	DK 1988-3379	19880621
	DK 172337	B1	19980330		
	HU 50768	A2	19900328	HU 1988-3160	19880621
	HU 214592	B	19980428		
	DD 283377	A5	19901010	DD 1988-316988	19880621
	RU 2009128	C1	19940315	RU 1988-4356030	19880621
	CA 1338808	A1	19961224	CA 1988-569944	19880621
	AU 8818216	A1	19881222	AU 1988-18216	19880622
	AU 627151	B2	19920820		
	CN 1030752	A	19890201	CN 1988-103779	19880622
	CN 1024547	B	19940518		
	JP 01079151	A2	19890324	JP 1988-153852	19880622
	JP 2578475	B2	19970205		
	EP 579263	A1	19940119	EP 1993-113146	19880622
	EP 579263	B1	19980916		
	R: AT, BE, CH, DE, ES, FR, GB, GR, IT, LI, LU, NL, SE				
	EP 673927	A1	19950927	EP 1995-104080	19880622
	EP 673927	B1	20010919		
	R: AT, BE, CH, DE, ES, FR, GB, GR, IT, LI, LU, NL, SE				
	AT 134618	E	19960315	AT 1988-109924	19880622
	ES 2083359	T3	19960416	ES 1988-109924	19880622
	EP 742207	A1	19961113	EP 1996-110252	19880622
	EP 742207	B1	20010829		
	R: AT, BE, CH, DE, ES, FR, GB, GR, IT, LI, LU, NL, SE				
	AT 171161	E	19981015	AT 1993-113146	19880622
	ES 2121039	T3	19981116	ES 1993-113146	19880622
	EP 1116716	A1	20010718	EP 2001-102878	19880622
	R: AT, BE, CH, DE, ES, FR, GB, GR, IT, LI, LU, NL, SE				
	AT 204862	E	20010915	AT 1996-110252	19880622

	AT 205828	E	20011015	AT 1995-104080	19880622
	ES 2160747	T3	20011116	ES 1996-110252	19880622
	ES 2164720	T3	20020301	ES 1995-104080	19880622
	US 5100901	A	19920331	US 1989-423349	19891018
	CN 1073939	A	19930707	CN 1992-112982	19921110
	CN 1034015	B	19970212		
	CN 1071417	A	19930428	CN 1992-112995	19921112
	CN 1038839	B	19980624		
	JP 07252216	A2	19951003	JP 1994-291169	19941125
	JP 2733203	B2	19980330		
	CA 1340192	A1	19981215	CA 1995-616996	19950424
	FI 9502850	A	19950609	FI 1995-2850	19950609
	FI 9602753	A	19960704	FI 1996-2753	19960704
	FI 103969	B1	19991029		
	DK 9601082	A	19961003	DK 1996-1082	19961003
	DK 175246	B1	20040719		
	DK 9601083	A	19961003	DK 1996-1083	19961003
	JP 10067739	A2	19980310	JP 1997-186306	19970711
	JP 3078244	B2	20000821		
	GR 3036553	T3	20011231	GR 2001-401406	20010906
PRAI	JP 1987-155058	A	19870622		
	FI 1988-2716	A	19880608		
	US 1988-209339	A3	19880620		
	CA 1988-569944	A3	19880621		
	CN 1988-103779	A	19880622		
	EP 1988-109924	A3	19880622		
	EP 1995-104080	A3	19880622		
	JP 1994-291169	A3	19880622		

OS MARPAT 110:173102

AB The title compds. [I; B = (CHR2)r, CO(CHR2)r, NR4(CHR2)r, etc.; J = alkyl, cyclic amide residue, R1CH:CH, (un)substituted Ph, cyclohexyl, heterocyclyl, mono- or divalent (un)substituted indanyl, PhCOCHMe, etc.; K = H, acyl, (un)substituted Ph, aralkyl, etc.; Q = N, C (sic), NO; R1 = H, alkoxycarbonyl; R2 = H, Me; R4 = H, alkyl, acyl, (un)substituted Ph; PhCH2, etc.; T = N, C; q = 1-3; r = 0-10; JB and BT may be doubly bonded] were prepared Ph3PCH2OMeCl was stirred 30 min at 0° with BuLi in Et2O after which 1-benzyl-4-piperidone was added and the mixture stirred at room temperature 3 h to give an oil which was refluxed 3 h in aqueous MeOH containing HCl to give 1-benzylpiperidine-4-carboxaldehyde (II). 5,6-Dimethoxy-1-indanone was stirred with (Me2CH)2NLi in THF containing HMPA after which II was added and the mixture stirred 2 h to give indanonylidenemethylpiperidine III (R5R6 = bond) which was **hydrogenated** over Pd/C to give, after acidification, III.HCl (R5 = R6 = H). The latter gave 55% inhibition of scopolamine-induced learning impairment in rats at 0.125 mg/kg orally.

IT

120011-67-8P	120011-68-9P	120011-69-0P	**120011-70-3P**	
120011-71-4P	120011-72-5P	120011-73-6P	120011-74-7P	120011-75-8P
120011-76-9P	120011-77-0P	120011-78-1P	120011-79-2P	120011-80-5P
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120014-02-0P	120014-03-1P	120014-04-2P	120014-05-3P	

120014-06-4P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of, as acetylcholinesterase inhibitor)

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     (FILE 'HOME' ENTERED AT 07:11:20 ON 15 FEB 2005)

     FILE 'REGISTRY' ENTERED AT 07:11:29 ON 15 FEB 2005
L1            1 S DONEPEZIL/CN

     FILE 'CAPLUS' ENTERED AT 07:11:53 ON 15 FEB 2005
L2           18 S L1/P

     FILE 'REGISTRY' ENTERED AT 07:13:43 ON 15 FEB 2005
L3            1 S DONEPEZIL HYDROCHLORIDE/CN

     FILE 'CAPLUS' ENTERED AT 07:14:11 ON 15 FEB 2005
L4           26 S L3/P
L5            4 S (L2 OR L4) AND ?CYCLIZ?
L6           13 S (L2 OR L4) AND HYDROGENA?

=> s l6 and (palladium or pt)
        146102 PALLADIUM
        227263 PT
L7            6 L6 AND (PALLADIUM OR PT)

=> s l7 and alcohol?
        376798 ALCOHOL?
L8            2 L7 AND ALCOHOL?

=> d bib 1-2

L8   ANSWER 1 OF 2  CAPLUS  COPYRIGHT 2005 ACS on STN
AN   2004:802718  CAPLUS
DN   141:314158
TI   Process for the preparation of donepezil and derivatives thereof
IN   Kumar, Yatendra; Prasad, Mohan; Nath, Asok; Maheshwari, Nitin
PA   Ranbaxy Laboratories Limited, India
SO   PCT Int. Appl., 25 pp.
     CODEN: PIXXD2
DT   Patent
LA   English
FAN.CNT 1
     PATENT NO.          KIND   DATE        APPLICATION NO.          DATE
     ---------------     ----   --------    -------------------      --------
PI   WO 2004082685        A1    20040930    WO 2004-IB843            20040322
         W:  AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH,
             CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD,
             GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,
             LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI,
             NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY,
             TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
         RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ,
             BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE,
             ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI,
             SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN,
             TD, TG
PRAI IN 2003-DE352        A     20030321
OS   CASREACT 141:314158; MARPAT 141:314158
RE.CNT  6     THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD
              ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8   ANSWER 2 OF 2  CAPLUS  COPYRIGHT 2005 ACS on STN
AN   2004:652671  CAPLUS
DN   141:174080
TI   Hydrogenation and benzylation process for the preparation of
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1-benzyl-4-[[5,6-dimethoxy-1-indanon)-2-yl]methyl]piperidine hydrochloride (donepezil hydrochloride)
IN Radhakrishnan, Tarur Venkatasubramanian; Govind, Sathe Dhanajay; Venkatraman, Naidu Avinash
PA India
SO U.S. Pat. Appl. Publ., 5 pp., Cont.-in-part of U.S. Ser. No. 365,717.
CODEN: USXXCO
DT Patent
LA English
FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2004158070	A1	20040812	US 2003-714724	20031117
	US 6649765	B1	20031118	US 2003-365717	20030212
PRAI	US 2003-365717	A2	20030212		

OS CASREACT 141:174080

=> s l7 not l8
L9 4 L7 NOT L8

=> d bib 1-4

L9 ANSWER 1 OF 4 CAPLUS COPYRIGHT 2005 ACS on STN
AN 2005:29309 CAPLUS
DN 142:113913
TI Catalytic **hydrogenation** process for the preparation of intermediates for acetyl cholinesterase inhibitors
IN Reddy, Bandi Parthasaradhi; Reddy, Kura Rathnakar; Reddy, Rapolu Raji; Reddy, Dasari Muralidhara
PA Hetero Drugs Limited, India
SO PCT Int. Appl., 16 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2005003092	A1	20050113	WO 2003-IN232	20030701

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRAI WO 2003-IN232 20030701
RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 2 OF 4 CAPLUS COPYRIGHT 2005 ACS on STN
AN 2004:589284 CAPLUS
DN 141:123572
TI Process for preparation of donepezil
IN Reddy, Manne Satyanarayana; Eswaraiah, Sajja; Thippannachar, Mathad Vijayavitthal; Chandrashekar, Elati Ravi Rama; Kumar, Podichetty Anil; Kumar, Kolla Naveen
PA Reddy's Laboratories Limited, India; Reddy's Laboratories, Inc.
SO U.S. Pat. Appl. Publ., 7 pp.

CODEN: USXXCO
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI US 2004143121	A1	20040722	US 2003-626499	20030724
PRAI IN 2002-MA555	A	20020724		

OS CASREACT 141:123572

L9 ANSWER 3 OF 4 CAPLUS COPYRIGHT 2005 ACS on STN
AN 2003:903267 CAPLUS
DN 139:381380
TI Process for the preparation of 1-benzyl-4-[(5,6-dimethoxy-1-indanon)-2-yl)methylpiperidine hydrochloride (donepezil hydrochloride)
IN Vidyadhar, Joshi Shreerang; Venkatraman, Naidu Avinash; Pandurang, Sutar Rajiv
PA USV Limited, BSD Marg., India
SO U.S., 3 pp.
CODEN: USXXAM
DT Patent
LA English
FAN.CNT 2

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI US 6649765	B1	20031118	US 2003-365717	20030212
US 2004158070	A1	20040812	US 2003-714724	20031117
PRAI US 2003-365717	A2	20030212		

OS CASREACT 139:381380
RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 4 OF 4 CAPLUS COPYRIGHT 2005 ACS on STN
AN 1999:464279 CAPLUS
DN 131:102201
TI Process for production of donepezil derivative
IN Iimura, Yoichi
PA Eisai Co., Ltd., Japan
SO PCT Int. Appl., 36 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 9936405	A1	19990722	WO 1999-JP111	19990114
W: CA, US				
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
CA 2316360	AA	19990722	CA 1999-2316360	19990114
EP 1047674	A1	20001102	EP 1999-900320	19990114
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
JP 11263774	A2	19990928	JP 1999-8759	19990118
US 6252081	B1	20010626	US 2000-582496	20000627
PRAI JP 1998-6908	A	19980116		
WO 1999-JP111	W	19990114		

OS CASREACT 131:102201; MARPAT 131:102201
RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT